

Black Cherry Rust¹

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INTRODUCTION: The black cherry or rum cherry (*Prunus serotina* J. F. Ehrh.) is the largest of the native cherry trees of the United States and the only native cherry of any commercial value. It matures as a medium tall tree of ninety feet or more in a dominant crown position in the forest. Predominant botanical features are its shiny green leaves, pendant white racemes of flowers in the spring followed by numerous purple-black and 1/3-1/2" diameter edible cherries. When dormant, the tree is recognizable by its characteristic smooth reddish-brown to black bark with prominent horizontal lenticels. The bark exfoliates into small scaly plates with age. The aromatic inner bark has been used medicinally. The rich, reddish-brown heartwood has always been greatly esteemed for furniture, cabinet making and interior woodwork (Everett 1981; Liberty Hyde Bailey Hortorium Staff 1978).



Though the range of black cherry is mostly in temperate eastern and central North America, the northern half of Florida is also part of its natural range (Everett 1981; Huxley 1992; Liberty Hyde Bailey Hortorium Staff 1978). The tree is commonly found in North Florida growing in fencerows from bird-deposited seed. The foliage, bark and seeds (not the pulpy fruit) of black cherry and other *Prunus* spp. contain enough cyanogenic glycosides to pose significant poisoning threats to both humans and livestock. The poisoning risk is most commonly encountered when livestock graze on wilted foliage of prunings from black cherry saplings and trees being cut from fencerows (Perkins and Payne 1978).

A sample of *P. serotina* with leaf spots (Fig. 1) was submitted in May 1989 to the division's Plant Pathology Section for diagnosis. The leaf spots showed evidence of rust etiology, a disease which is uncommon for black cherry in Florida.

SYMPTOMS: Initially, spots as seen from the upper leaf surface are small, angular to irregular, less than 1 mm across and pale green to yellow. Later, they expand to less than 2 mm, become rust-colored and may coalesce to form larger lesions.

Fig. 1. Leaf spots on upper (A) and lower (B) surfaces of *Prunus serotina*. x1. Photography credit: Jeffrey W. Lotz (DPI #89048).

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Pustules (Fig. 2) of urediniospores (Fig. 3) are formed on the lower leaf surface and are less than 1 mm across.

CAUSAL

Tranzschelia arthurii (Tranzschel and Litvinov 1939) (identified by Dr. Joe F. Hennen, Department of Botany and Plant Pathology, Purdue University, West Lafayette, Indiana 47906) is the cause of the leaf spots. The urediniospores measured $44.6(29.9-56.1) \times 20.2(16.2-26.2)$ μm mean (min.-max.). This rust was reported previously only twice on black cherry in Florida (Lopez-Franco and Hennen 1990). Spermagonia of *T. arthurii* are mainly hypophyllous or sometimes on both surfaces, and are conical to hemispherical. Aecia are hypophyllous, with aeciospores catenulate, globoid, and flattened at the base. Uredinia are hypophyllous and dark brown, while urediniospores are mostly elongate obovoid or oblong-ellipsoid, with a usually smooth apex (Fig. 3). Telia are hypophyllous, blackish-brown, sometimes intermixed in uredinia or may develop in independent sori (Lopez-Franco and Hennen 1990).

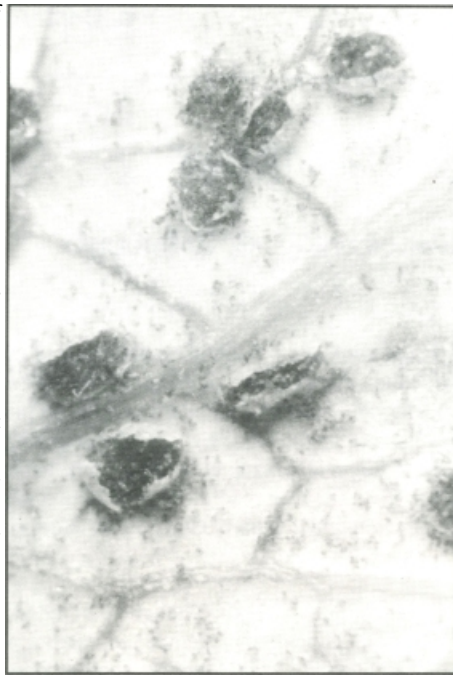


Fig. 2. Pustules of *Tranzschelia arthurii* on the lower leaf surface of *Prunus serotina*. x35. Photography credit: Jeffrey W. Lotz (DPI #89048).

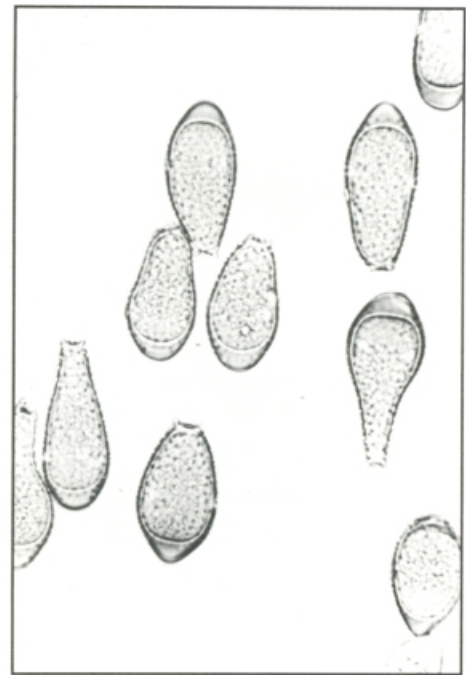


Fig.3. Urediniospores of *Tranzschelia arthurii*. x600. Photography by N. E. El-Gholl

The other reported species on *P. serotina* in Florida is *Tranzschelia pruni-spinosae* var. *americana*. *T. pruni-spinosae* var. *americana* differs from *T. arthurii* as follows: spermagonia and aecia unknown, uredinia oblong to obovoid, telia cinnamon brown (Lopez-Franco and Hennen 1990).

CONTROL: If chemical control is warranted, mancozeb may be tried (Simone *et al.* 1994-95).

SURVEY AND DETECTION: Look for rust pustules on the lower leaf surface.

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